

# **Reducing the Negative Consequences of Climate Variability through the Use of Forecasts and Vulnerability Analysis in Cities.**

## **The Case of Tijuana, Mexico**

**First Report from June 2000- February 2001**

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### **Accomplishments**

The development of the project has concentrated so far in building the data bases of the project. Special attention has been given to the creation of a data base identifying the areas damaged by climate related events during the last 30 years. We are reviewing newspapers from Tijuana for the last 30 years. Through this process we are identifying critical information about the extent and importance of previous climate related damages. The data base covers the following variables by year and type of event: characteristics of the event, areas of the city damaged, type of damage, social groups affected, extend of the damage in terms of economic, social and human costs, sources of information. This has been an intensive and long process, but we consider this information vital for the development of other parts of the project. For example, this data allows us to identify areas that are frequently affected by climate related disasters. These areas will be used for our in-depth interviews to be carried out later this year. The results of this data base are being incorporated into the Geographic Information System of the project. We will cross this information with data from El Niño years and other climate data.

Parallel to the creation of this data base, we have begun to create three additional data bases for the project. A data base with bio -physical data (topography, geology, soil, vegetation, land use, hydrology, watersheds, etc.). A data base with socioeconomic data. A data base with urban data for Tijuana (public services, transport, economic activities). These data bases are also part of our GIS. We have made the following development in the data bases mentioned above. In the biophysical data base we have the topography and the geology layers digitized and we are working on the vegetation layer. On the socioeconomic data, we have layers with census data for 1990 and 1995 and we are waiting the release of data for the 2000 census. We still need to work on the economic data. The data base with urban data still is in its early stages. We have data for 1990, but it needs to be updated to 2000. We plan to keep on working on these data bases the rest of this year.

In terms of the communication with the climate forecasting community, we have begun our collaboration with the Centro de Ciencias de la Atmosfera at the National Autonomous University of Mexico (UNAM). Cecilia Conde has begun to compile historical data records for Tijuana. We expect she will begin working on the forecasts this coming April. I plan to travel to Mexico City in June to work with her some days on this issue.

We have had a number of meetings with stakeholders in Tijuana. We have two major partners with the local authorities in Tijuana: the Municipal Institute for Urban Planning (in charge of all urban planning for the city) and the Municipal Center for Emergency Response. The collaboration with the Center for Emergency Response has worked very well. The Director is very interested in the project. He considers it a great opportunity to upgrade the emergency response plan in Tijuana (he described our project as the project he always wanted to do, but never had the resources to develop). The relationship with the Municipal Institute for Urban Planning has been a bit more problematic due to initial doubts from the Director of this institution. I have met with him several times during the last months and he has now a better sense of the project and the benefits for his institution to be a partner in this endeavor. We expect we will have a good relationship with this institution as well. I plan to meet with the mayor of Tijuana in the near future (May or June) to keep him informed of the development of the project and in preparation for a future meeting with the forecasters and other stakeholders. It is worth noting that none of the decision-makers in the municipal government in Tijuana use climate forecasts at this point.

### **Delays in the Project.**

We had a late start in this project waiting for the NOAA funds. We got the funds until late August. There was not much we could do in terms of field work in the meantime given the uncertainty about when we would receive the funds. There was also an unexpected delay in signing the subaward with El Colegio de la Frontera Norte and transferring the funds to that institution. Despite our initial agreement of collaboration, when we were ready to transfer the funds to COLEF we were surprised by the concerns raised by the administrations at UCSC and COLEF. They wanted further clarifications on some issues of the subaward. This is the first subaward of this type for both administrations and they wanted to make sure they followed the right procedure. After several meetings, all doubts have been cleared now. It is worth noting that while the administrations agreed on the details of the subaward, we kept working in the development of our data bases as originally planned.

### **Plans for Year Two**

Our plans for year two are to complete the project. We plan to complete our vulnerability analysis and the forecasts early next year. We expect to complete the data bases and the GIS components of the project in the second part of this year. The in-depth interviews will also be completed late this year. The last part of the vulnerability analysis and the climate forecasts will be completed early next year. We plan to have our first informal meeting with stakeholders to discuss the developments in the project in February next

year. This will give us time to incorporate the input from stakeholders into the project. The final formal meeting presenting and discussing the results of the project with stakeholders and forecasters will probably take place in May 2002.